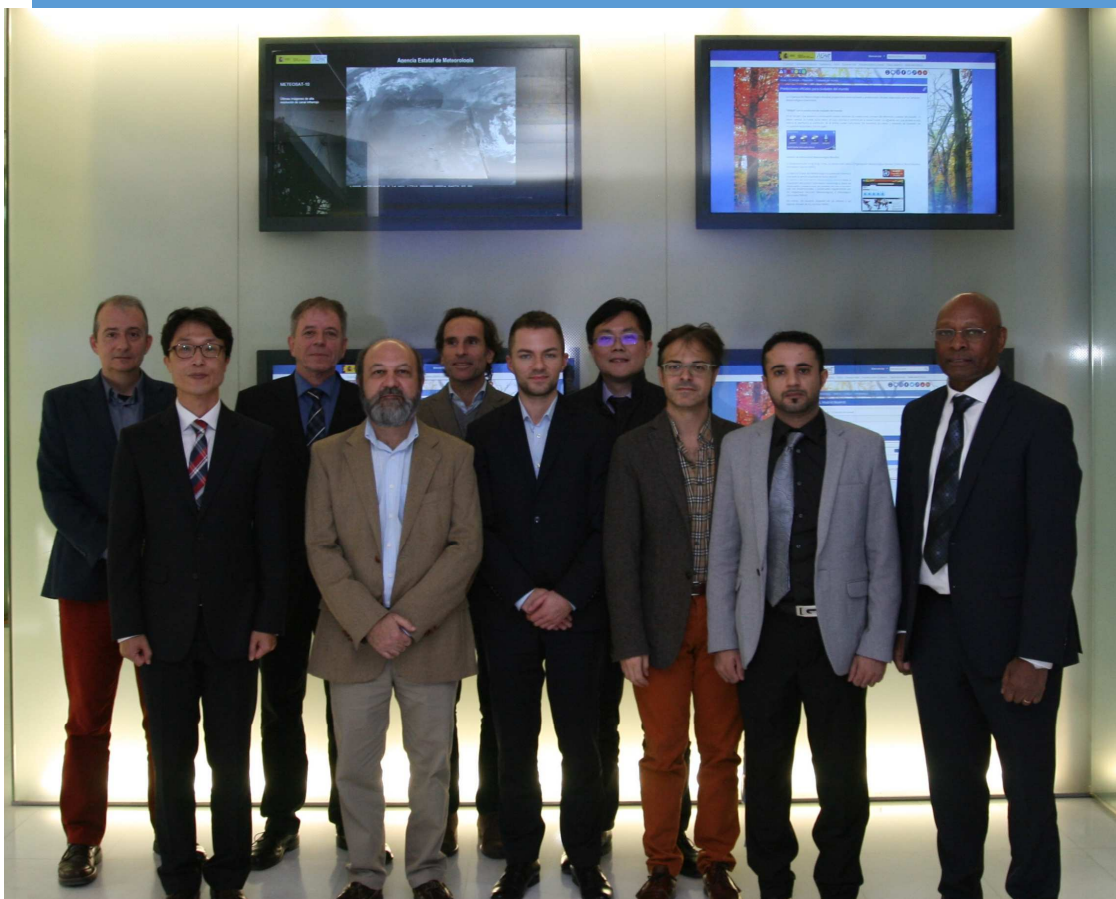


**REPORT OF THE SIXTH COORDINATION MEETING OF
THE WORLD WEATHER INFORMATION SERVICE
(WWIS) WEB SITE HOSTS**

*MADRID,
SPAIN, 14 - 16
NOVEMBER
2017*



REPORT OF THE SIXTH COORDINATION MEETING OF THE WORLD WEATHER INFORMATION SERVICE (WWIS) WEB SITE HOSTS

(MADRID, SPAIN, 14 - 16 NOVEMBER 2017)

1. INTRODUCTION

1.1. At the kind invitation of the Government of Spain, the 6th Coordination Meeting of the World Weather Information Service (WWIS) Website Hosts was held in Madrid, Spain from 14 to 16 November 2017. The list of the participants is attached as Annex I.

1.2. The Meeting was opened on behalf of the Permanent Representative of Spain by a representative from the meteorological service of Spain, Mr José Antonio Fernández Monistrol, Director of Production and Infrastructure. He emphasized on the great importance Spain attached to hosting the Spanish version of the website. The coordinator of WWIS, Mr. Armstrong Cheng, made comments thanking all the web language hosts for their cooperation which ensured success of the initiative. The representative of WMO, Mr Samuel Muchemi, expressed gratitude to all the hosts for their hard work in ensuring the success of the WWIS website. He stressed that the meeting would need to discuss how it could enhance the participation of Members in WWIS as a primary outcome of the meeting.

2. SUMMARY OF MAIN OUTCOMES OF THE MEETING

Mr Muchemi provided a template in Excel format using which the meeting recorded the actions to take in order to enhance the participation of Members in WWIS. The actions are contained in Annex III.

The meeting noted that:

- there are gaps in the WWIS caused by (i) not all Members are participating in the WWIS; (ii) not all Members are submitting forecast to the WWIS reliably especially those that send forecasts manually; (iii) many Members are not contributing forecast up to 5 days; (iv) some Members are not updating their forecasts to the WWIS often enough (at least twice a day);
- WWIS and Severe Weather Information Centre (SWIC) have important roles to contribute to the development of WMO Global Multi-hazard Alert System (GMAS) and Common Interface for Service Delivery (CISD);
- there is urgent need to enhance the participation of Members on WWIS;
- there is urgent need to provide information to Members to promote and increase their participation on WWIS;
- there are benefits to collect weather information directly from Members' websites through data service or Application Programming Interface (API);
- the Application Programming Interface (API) will become indispensable in serving clients especially web and mobile based communication channels;
- there is a need to update the WMO Guide on WWIS

- SWIC will be upgraded with GIS capability to display CAP alerts from Members

The meeting decided to:

- have an intensified campaign to contact and engage Members and gain enhanced participation on the WWIS including (i) contacting RA presidents and offices; (ii) PWS focal points; (iii) participation of Language Hosts;
- conduct a promotion campaign including social media, Search Engine Optimization (SEO) etc.;
- Use the UN press to promote the new site
- use ECMWF data as a last resort for providing 5-day forecasts on the WWIS after consultation of concerned Members;
- create a software or utility to facilitate the timely and regular submission of forecasts to WWIS for some Members who are in need;
- invite NMHSs to include forecast submission to WWIS in their Standard Operating Procedures (SOP) as necessary;
- enhance the existing monitoring website to provide notification email and/or web service;
- include CAP warnings and alerts on the WWIS as far as available and agreed by respective Members;
- conduct an E-survey on the use of data service/API on website by Members for the purpose of direct acquisition of data;
- liaise with Members to transit to the use of data service/API for submission of data to WWIS;
- Prepare the portal for BigData and OpenWeather compliancy
- enhance the JSON/XML file for WWIS data to include copyright and attribute information and implement easier import and export features;
- develop concept paper for future WWIS API for further discussion and RSS aggregator;
- take appropriate actions with a view to increasing the number of cities taking into account Members' data policy;
- update the WMO Guide and flyer for WWIS and offer a E-book version out of it ;
- create WMO mini-portal of WWIS for provision of operational procedures of WWIS;
- prepare simple guide for forecast submission in all WMO languages;

3. REVIEW OF THE STATUS OF WWIS

Mr Armstrong Cheng of Hong Kong, China provided a brief review of WWIS, which was established in 2000 as a pilot to provide centralized source of official weather information and to enhance the visibility of NMHSs, especially those in developing countries. It became an operational component of PWS Programme in 2005 and was extended to 11 languages over the years. In 2011, a mobile app namely MyWorldWeather featuring WWIS was introduced for iOS platform and was later brought to Android platform in 2013. The Data Collection and Production Centre

(DCPC) of the WWIS was opened for free and unrestricted access in 2014 in response to Congress decision.

The meeting was informed that 7 new members joined the WWIS in 2016 but unfortunately most of them only provided climatological information for some cities only. On the other hand, forecast from 134 new cities contributed from Armenia, Australia, Chile, Czech Republic, Kyrgyzstan, Myanmar, Nepal, New Zealand, Romania, Poland, Spain, Suriname were added to the WWIS. The Italian version was brought to the MyWorldWeather app for Android platform. In addition, a widget for incorporation on websites by web developers was also introduced.

The meeting was also informed that in 2017 in addition to an increase of 4 new cities contributed by Argentina, an upgrade of the WWIS website was made to include a number of new features such as current weather, global satellite imageries, sunrise and sunset information. The website also featured a new user interface to facilitate quick search of cities, and adopted responsive web design that provided better browsing experience for mobile users. Updated version of MyWorldWeather app featuring new contents of the WWIS website were also made available for iOS and Android platforms. As of October 2017, the WWIS provided weather information for over 2,100 cities contributed by 169 members in 11 languages. The usage statistics also showed a significant boost after launching of the new websites and app.

A brief review of the action items decided in WWIS-5 was also made. It was noted that the decision on enhancement of the WWIS with current weather was successfully carried out with hourly observations in XML format provided by 6 members, viz. Cyprus, Germany, Hong Kong, Italy, Latvia, and Poland, while observations from other members were provided through SYNOP reports.

Through the statistics and reports compiled, the meeting was briefed on gaps identified in the following aspects: (i) not all WMO Members participates in the WWIS; (ii) not all Members submit forecast to the WWIS reliably especially those who send forecast manually; (iii) many Members do not contribute forecasts to the WWIS reliably; and (iv) some Members do not update forecast to the WWIS at the required frequency. The meeting was also informed that observation and forecast data was directly fed from some Members' websites where data service is available and benefits were found in terms of efficiency in data transmission as well as the increased participation of those Members on the WWIS.

The meeting was also informed that the recommendation of the ET/SPII meeting in 2016 about the request of ECMWF in provision of ENS data to augment the gap of missing forecast information.

The meeting was briefed about the development of WMO Global Multi-hazard Alert System (GMAS). Warnings and alerts in Common Alerting Protocol (CAP) format issued by alerting authorities including NMHSs would be aggregated in the WMO Alert Hub which would be a component of GMAS. The WMO Severe Weather Information Centre (SWIC) website would be upgraded to become a GIS-enabled platform as a component of the GMAS to display warnings and alerts from alerting authorities. Technical details on the incorporation of CAP warnings and alerts from WMO Alert Hub on to the WWIS were also discussed.

The potential benefits opened up by developing a user-friendly API for use by developers, third-party websites and apps were also discussed and it was considered that this concept should be further developed taking into consideration of the aspects of technical side and ownership of the data.

4. EXPERIENCE SHARING AND COORDINATION CHALLENGES: PRESENTATIONS BY WWIS WEBSITE HOSTS

4.1. Ahmed Al-Farsi (Oman)

Mr. Ahmed Al Farsi, Meteorological System Engineer in Oman DGMET provided the following points in the discussion:

- There was enhancement in operating of WWIS Arabic version where the submission of the city forecast data was increased to 5 days instead of 3 days for Oman cities.
- Currently the forecast data are provided in XML-Format automatically through FTP channel once a day and the weather information by GTS every 3 hours.
- The new WWIS Arabic version with new feature of satellite and theme was updated successfully and there were some translation corrections made.
- A new list has been prepared to be added to increase the number of cities.
- The statistics of WWIS Arabic version show stability for the current year 2017.
- Warning bulletins and notifications are important to be included on WWIS site and MyWorldWeather Mobile app.

Conclusion and features for improving WWIS:

- WWIS needs more Advertisement, DGMET will also start to promote the WWIS Arabic version through its available media (DGMET events, YouTube, Twitter, Facebook ...etc.).
- Soon DGMET will start to issue city forecasts twice a day.
- DGMET has initiated with Oman ISP for conducting a project to implement the CAP standard.

4.2. R. ZHAO (China)

Mr Zhao participated by teleconference. He was able to listen in but due to technical reasons, was not able to make a presentation

4.3. Seung-kyum PARK (Korea)

- The Korea Meteorological Administration (KMA) launched Korean-language version of WWIS website in December 2015. KMA has started Digital Forecasts (or "Dongs¹ Forecast") service, which shows detailed Met. Information for each of 6,000 *dongs*. since 2008 (resolution: 5km);

¹ A Dong is an *administrative division: the smallest level of urban government to have its own office in South Korea*

- There is a need to promote WWIS website and to provide more reliable weather forecast;
- There is a need to provide more content:
 - more detail weather forecast (day & night, 3hour..)
 - forecasts for at least 5 days
 - display satellite & radar images
 - increase number of cities
- Need to include a link to WWIS on the website of NMHSs for Members who have not yet done so, and to include other weather links (CAP, RAII website..)
- Need to enable local media, tourist companies, hotels and the public to use WWIS

4.4. Mr Rudolf MOHR Deutscher Wetterdienst (DWD)

Mr Rudolf MOHR made the following points concerning the German version of WWIS:

- There is no change in operating of WWIS Website at DWD since the last meeting. The architecture is unchanged.
- The new version was launched on 17th Aug 2017 without any problems.
- The deployments of updates and patches ran very well in the past without any problems and in a short amount of time.
- Since 1 April 2017, current weather and forecasts are provided in XML-Format as requested. Current weather is available every 1 hour, the forecasts every 24 hours.

Furthermore Mr Mohr presented some additional information about the new Open Geospatial Consortium (OGC) Services, where products as WMS (Web Map Service) and WFS (Web Feature Service) are provided by DWD. By this service it is possible to implement official warnings and products of DWD in third part websites. The complete warning situation of Germany is also provided in the CAP format with Atom feeds in English and German as RESTful² web service.

The statistic of WWIS for the current year shows a decreasing number of requests.

Conclusion and proposals for the enhancement of WWIS:

- More current weather and forecasts for more locations for Germany if the data policy allows this
- Establishing a process to inform the hosts about the missed data for monitoring purposes
- Enhancement of the portal of WWIS in the way, that the availability can be request with more details as webservice or as an e-mail
- Considering a central hosting of all the language versions as an option

² REST (REpresentational State Transfer) is an architectural style for developing web services. REST is popular due to its simplicity and the fact that it builds upon existing systems and features of the internet's HTTP in order to achieve its objectives, as opposed to creating new standards, frameworks and technologies.

4.5. Guido Guidi (Italy)

LTC Guido Guidi of Italian Air Force Meteorological Service joined the meeting through video conferencing (Webex). He provided a short review of the Italian participation to the WWIS program, which Italy joined since the beginning of the project.

In his presentation, LTC highlighted the activities implemented following the WWIS-5 meeting in Lisbon, as:

- The number of Italian cities whose observation, forecast and climate information are available increased up to 30, following criteria of territorial homogeneity – that is covering the whole Italy, of cultural and touristic interest of the chosen cities, and of data availability – that is observation and forecast both available.
- Use of the WWIS widget to access WWIS information from the Italian Air Force Met Service web site home page (www.meteoam.it) in order to both give visibility to the program within the country and to offer worldwide weather and climate information to its users.
- Upgrade to the new WWIS Website layout of the Italian version of WWIS (wwis.meteoam.it).
- The choice to follow cultural and touristic criteria of selection of the cities, and to insert the WWIS widget on the Italian web site home page, were greatly appreciated among the participants. In fact, the latter brought a very significant web traffic increase to both the Italian and the international version of the WWIS web site.
- Finally, LTC Guidi showed the participants, the criteria followed on the Italian Air Force Met Service web site to display weather alerts – that is following the Meteoalarm program rules, to communicate gale, sea state and coastal warning to the public, and to deliver web services to the users through customized widgets and feed RSS.

4.6. Kazimierz Robert (Poland)

Robert Kazimierz, a representative of Institute of Meteorology and Water Management - State Research Institute of Poland, provided a review of the contribution and development of the polish version of WWIS:

- Since 2015 the data coverage for polish version of WWIS has increased from 8 to 16 cities with current weather data, 5-day forecast and climatological data for all the cities.
- There is possibility to extend the data coverage of another 22 polish cities.

- Statistical data for the polish version of WWIS show an upward trend in terms of the number of visits. The main reason is the launch of the new version of the WWIS and increased promotion on WMO's official website and social channels (including IMGW-PIB). The main platform from which users get to the Polish WWIS website is the official weather service of IMGW - Pogodynka.pl, which has a direct link to WWIS on the main page.
- The statistics for mobile application "MyWorldWeather" show a steady increase in interest among users. The biggest increase in visits of applications was recorded in August 2017. The main reason is the launch of a new version of the WWIS website and the promotional activity. This trend is slowly becoming normalized but is still high.
- Suggestion of adding new climatological data such as number of rainy days, number of sunny days and number of hours of sunshine (if these data are available) to raise the functionality and understanding of information presented on WWIS and on the mobile application.
- At the end of presentation, Mr. Kazimierzczak showed the latest version of the official website of IMGW-PIB (imgw.pl) and briefly presented the official weather service of IMGW-PIB (pogodynka.pl), including some of its data such as radar data, Hydrological and Meteorological Monitor, dedicated weather for farmers and climate subpage.

4.7. Riccardo DEUS (Portugal)

Ricardo Deus presented the following:

- Description of Portuguese version of WWIS infrastructure;
- update process, regarding the static and dynamic content, the dynamic information was optimized taking into account scripts procedure proposed by project coordination, Hong Kong Observatory;
- website project with new and refreshed design, responsive pages and has major three areas:
 - homepage block with combined satellite image with present weather data;
 - city information page, first block with city daily forecast for 5 days and present weather
 - city information page, second block with city climate date;
- the new block with satellite image and present weather had received positive feedback from several users;
- presented Google Analytics data from access information for the last 2 years ending June 2017:
 - there were 27% new users and 73% return users.

- the origin of the visits area: 61.1% referral, 28% direct, 10.5% organic and only 0.4% from social network.
- visitors have 26-second sessions on the website, on the average;
- visitors access 1.19 pages per session on the average;
- comments:
 - positive: new design; satellite information layer; forecast table information;
 - negative: connection to social network; use data in API solution

4.8.F. J. MÉNDEZ RÍO (Spain)

Mr. Francisco Javier Méndez Río presented the following points:

- A summary of AEMET participation in WWIS project during the last 12 years.
- The increase, in June 2016, in the number of cities provided by AEMET from 52 to 79, with 5-day forecast and climatological information.
- That it is planned to provide hourly observation data for these 79 cities in the next future.
- The correct implementation of the revamped WWIS in the Spanish version in August 2017.
- That once the technological update of WWIS has been carried out, the way to improve the service could imply:
 - The increase in the number of available cities;
 - The promotion of WWIS by NMHSs; and
 - The possible inclusion of weather warnings.
- The revamped AEMET official website and APP, and the WWIS link location on its homepage.
- The new AEMET Opendata that provides to users an API REST in order to facilitate the reuse of AEMET meteorological and climatological data.
- The evolution of the usage of the AEMET official website and APP and the number of downloads of data.

4.9 Federico Galati (WMO)

Mr. Federico GALATI provided the following information:

- A portfolio of on-line sites displaying World Weather platform and widget. He explained the latest Web developments in WMO , citing the introduction of a common future GIS platform using ESRI, which may impact the new WWIS; the expansion of WWIS through a set of on-line Websites, and statistics to illustrate its growing success.
- A brief review of the action items decided at WWIS-5, together with a list of what were completed. The adoption of modern Web technology was noted to have been effected. He covered the broad spectrum of modern Web

- (technologies and processes), and how these are related or can be applied to WWIS, providing benefits to our members and users at large. These include:
- Artificial Intelligence/Virtual Reality;
 - Cloud based computing;
 - Static sites generators;
 - New scripting and programming Web languages; and
 - Bots or Internet of things/appliances.
- Emphasis on covering more behavior tracking (data analysis and regular monitoring) to improve WWIS, and moving away from data- to product-centric as a more user-centered approach;
 - In order to attract more Members to WWIS, we need to make them understand the real Web value of the platform and its potential for public-private engagement.
 - Efforts should be made in the areas of:
 - Real User Experience for Web Applications;
 - Gartner 5 Application Performance monitoring;
 - Putting data, not technology at the center of the Big Data strategy;
 - Introduce Metadata to WWIS;
 - Social media presence and SEO,
 - Adopting SMAC process (Social, Mobile, Analytic and Cloud); and
 - Learning experience from W3C spatial and Data Web practices.
 - To achieve higher levels of service and expertise for WWIS and SWIC, we need to rethink completely their digital strategies such as:
 - Web Caching,
 - Compression,
 - Optimization,
 - Minimization, and
 - Application Performance Monitoring.
 - The tools and techniques to the benefit of WWIS, including mobile apps for easy access to services by public and private sectors.
 - The adoption and development of a WWIS API (Application Interface). APIs are commonly used by developers to abstract the complexity of a software function that can be re-used on any platforms independently of the technology itself and virtually anywhere. An API provides a direct and development of a WWIS API (Application Interface)
 - linked the WWIS project to the WMO Global Multi-hazard Alert System (GMAS) project and how alerts in Common Alerting Protocol format can be aggregated on-line.
 - Introduced the new WMO Web processes/policies, layouts and standard which may affect WWIS, by playing a WMO video titled: "[Why the World Needs Meteorologists](#)";
 - Introduced "Open Weather" as coordinated essentially by UK Met Office that leverages APIs, and GEOSpatial processes.

- Emphasized quote by Richard Carne (*UK Met Office*): 'WMO is mandated to provide the framework for international cooperation for the development of meteorology, climatology and operational hydrology. Yet this mission to deliver interoperability within those domains is heavily biased toward the generate side of the value chain. The WMO is continuing making efforts in defining how weather and climate information should be packaged and delivered for use by Governments, citizens and commerce – enabling them to create socio-economic value. There is a compelling need for the WMO community to maybe rethink how we enable interoperability for the right-hand-side of the weather information value chain: the use and exploitation of weather and climate information. Steps involved can here be defined as Monitoring & observation > Modeling & forecasting > Interpretation > Decision making > Economic value'

LIST OF PARTICIPANTS

NO.:	COUNTRY:	NAME:	ADDRESS:
1.	China	Mr ZHOU Rui (By teleconference)	China National Meteorological Center China Meteorological Administration No. 46, Zhong Guan Cun, South Street, Haidian District BEIJING, China Tel.: +86 10 5899 5613 Fax: +86 10 6840 6814 E-mail: zhaorui@cma.gov.cn
2.	Germany	Mr Rudolf MOHR	Deutscher Wetterdienst Department of Systems and Operations Division Communication Frankfurter Strasse 135 D-63067 OFFENBACH, Germany Tel.: +49 69 8062 4808 Fax: +49 69 8008 63205 E-mail: Rudolf.Mohr@dwd.de
3.	Hong Kong, China	Mr Armstrong CHENG	Hong Kong Observatory 134A Nathan Road KOWLOON Hong Kong, China Tel.: +852 2926 8358 Fax : +852 2311 9448 E-mail: yccheng@hko.gov.hk
4.	Italy	Lt. Col. Guido Guidi (By teleconference)	Lt. Col. Guido Guidi Operational Weather Center Italian Air Force Weather Service Mil.Airport M. De Bernardi" I-00040 Pomezia, Rome (ITALY) Phone: (+)39 0691293231 Fax: (+)39 0691292457 Mob: (+)39 3460866980 Lt. Col. Guido GUIDI < guido.guidi@am.difesa.it >
6.	Oman	Ahmed Al-Farsi	Mr Ahmed Al-Farsi

			<p>Meteorological System Engineer Directorate General of Meteorology (DGMET) Muscat international Airport, Sultanate of Oman Mobile: +968 95541803 Office: +968 24354632 Fax: +968 24348501</p> <p>a.alfarsi@met.gov.om</p>
7.	Poland	Mr Robert KAZIMIERCZAK	<p>Email: Kazimierczak Robert Press Office Institute of Meteorology and Water Management - National Research Institute Poland</p> <p>Robert.Kazimierczak@imgw.pl</p>
8.	Portugal	Mr Ricardo DEUS	<p>Instituto de Meteorologia, I.P. Rua C do Aeroporto de Lisboa 1749-077 LISBOA, Portugal Tel.: +351 21 844 7000 Fax: +351 21 840 2370 E-mail: ricardo.deus@meteo.pt</p>
9.	Spain	Mr Francisco Javier MÉNDEZ RÍO	<p>Agencia Estatal de Meteorología de España Área de Explotación y Gestión de Leonardo Prieto Castro 8 28040 MADRID, España Tel.: +34 91 581 9793 Fax: +34 91 544 5307 E-mail: fmendezr@aemet.es</p>
<p>WMO SECRETARIAT 7 bis, avenue de la Paix, Case Postale No. 2300 CH-1211 GENEVA 2, Switzerland</p> <p>PWS Website: http://www.wmo.int/pages/prog/amp/pwsp/eventsexpertmeetings_en.htm</p>			
11.	WMO Headquarters, Switzerland	Mr Samuel MUCHEMI Scientific Officer	<p>Public Weather Services Division Weather and Disaster Risk Reduction Services Department Tel.: +41 22 730 8137 Fax: +41 22 730 8128 E-mail: SMuchemi@wmo.int</p>
12.	WMO Headquarters,	Mr Federico GALATI	<p>Public Information Products and Website Management Unit (PWMU),</p>

	Switzerland	Web Manager	Communication and Public Affairs (CPA) Office, Cabinet and External Relations (CER) Department Tel.: +41 22 730 8367 Fax: +41 22 730 8037 E-mail: FGalati@wmo.int
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**PROGRAMME OF THE SIXTH COORDINATION MEETING OF THE WORLD
WEATHER**

INFORMATION SERVICE (WWIS) WEB SITE HOSTS

(MADRID, SPAIN, 14 - 15 NOVEMBER 2017)

PROVISIONAL PROGRAMME

Tuesday 14 November 2017

DAY 1			
0900-0920	Opening	<ul style="list-style-type: none"> • Representative of AEMET • A. Chen (HKO) • S. Muchemi (WMO) 	20 minutes
0920-0930	<ul style="list-style-type: none"> • Assigning Chair of the meeting • Adoption of the agenda 	<ul style="list-style-type: none"> • S. Muchemi (WMO) 	10 minutes
SESSION 1: REVIEW OF THE STATUS OF WWIS			
0930-1030	Review of current status of WWIS since the WWIS-5 meeting (Lisbon, Portugal, 2015).	<ul style="list-style-type: none"> • Presentation by A. Cheng (HKO) followed by Discussion (All Participants) 	60 minutes
1030-1100	GROUP PHOTO; COFFEE / TEA BREAK		30 minutes
1100-1230	Experience Sharing and Coordination Challenges: presentations by WWIS website hosts	<ul style="list-style-type: none"> • Ahmed Al-Farsi (Oman) • R. ZHAO (China) • Seuungkyum PARK (Korea) 	90 minutes
1230-1400	LUNCH BREAK		90 minutes

1400-1515	Experience Sharing and Coordination Challenges: presentations by WWIS website hosts (continued)	<ul style="list-style-type: none"> • R. Mohr (Germany) • Guido Guidi (Italy) • Kazimierczak Robert (Poland) 	75 minutes
1515-1545	COFFEE / TEA BREAK		30 minutes
1545-1700	Experience Sharing and Coordination Challenges: presentations by WWIS website hosts (continued)	<ul style="list-style-type: none"> • R. DEUS (Portugal) • F. J. MÉNDEZ RÍO (Spain) 	75 minutes
1700	END OF DAY 1		

Wednesday, 15 November 2017

0900-1000	Modern Web (WWIS version 3)	<ul style="list-style-type: none"> F. Galati (WMO) 	60 minutes
1000-1030	COFFEE/TEA BREAK		30 minutes
SESSION 2: OPTIMIZATION OF OPERATIONAL PROCEDURES			
1030-1130	Discussion on the optimization of operational procedures	<ul style="list-style-type: none"> A. Cheng (HKO) 	60 minutes
1130-1230	Implementation Plan to enhance participation of NMHSs in WWIS	<ul style="list-style-type: none"> S. Muchemi (WMO) (All Participants) 	60 minutes
1230-1400	LUNCH BREAK		90 minutes
1400-1530	Implementation Plan to enhance participation of NMHSs in WWIS	<ul style="list-style-type: none"> S. Muchemi (WMO) (All Participants) 	90 minutes
1530-1600	COFFEE / TEA BREAK		30 minutes
1600-1630	Web hosts language coordination issues, common framework and translation	<ul style="list-style-type: none"> Discussion (All Participants) 	30 minutes
1630-1700	Visit to AEMET's installations	<ul style="list-style-type: none"> TBD 	30 minutes
END OF DAY 2			

Thursday, 16 November 2017

SESSION 3 – THE FUTURE OF WWIS			
0900-1000	Further Enhancement of the WWIS	<ul style="list-style-type: none"> • A. Cheng (HKO) 	60 minutes
1000-1030	COFFEE/TEA BREAK		30 minutes
1030-1100	Further Enhancement of the WWIS (Continued)	<ul style="list-style-type: none"> • A. Cheng (HKO) 	30 minutes
1100-1200	Discussion on Data Transfer Protocol	<ul style="list-style-type: none"> • Discussion (All Participants) 	60 minutes
1200-1230	Future Direction of the WWIS and SWIC and their roles in PWS	<ul style="list-style-type: none"> • A. Cheng 	30 minutes
1230-1400	LUNCH BREAK		90 minutes
1400-1530	Developing report of the meeting	<ul style="list-style-type: none"> • TBD 	90 minutes
1530-1600	COFFEE / TEA BREAK		30 minutes
1600-1630	Finalization of Report	<ul style="list-style-type: none"> • Discussion (All Participants) 	30 minutes
1630-1650	<ul style="list-style-type: none"> • Any other business 	<ul style="list-style-type: none"> • All 	20 minutes
1650-1700	<ul style="list-style-type: none"> • Closure 	<ul style="list-style-type: none"> • AEMET Rep • HKO • WMO 	10 minutes
END OF MEETING			

		WWIS Improvement Work Plan by Month																																										
Task	Responsible	Status	2017												2018												2019																	
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12						
1.	Increase number of Members participating in WWIS																																											
(a)	Identify dedicated individuals/teams and establish easy communication options	S. Muchemi													■																													
(b)	Engage RAs working with presidents	S. Muchemi/Armstrong													■																													
(c)	Engage the RA Office at the Secretariat	S. Muchemi/Armstrong													■																													
2.	Fill up gaps for Members not participating in WWIS																																											
(a)	Identify Members who need ECMWF data for compiling forecasts (Criteria: consensus with NMHSs)	S. Muchemi/Armstrong													■																													
(b)	Compile a list of cities	Armstrong													■																													
(c)	Acquire ECMWF data and prepare it	Armstrong																			■																							
(d)	Create a software to facilitate submission of WWIS forecast	Armstrong																			■																							
(e)	Confirm with Members to	S.																									■																	

